

## REVIEWS

*Soil-Plant Relations: An Ecological Approach.* By D. W. JEFFREY. Croom Helm, London and Sydney, and Timber Press, Portland, OR. 1987. 295 pp., \$26.95 (paper); \$33.95 (hardbound).

The below-ground environment for plants is too often overlooked by botanists. Despite the plethora of research papers, symposia and books on the soil-plant interface, it largely remains the domain of the specialist. It is refreshing, therefore, to encounter a generalist's guidebook to this important earthy subject. Jeffrey's book looks at the soil-plant system, not from a greenhouse or agricultural view, but from an ecological one.

The book's three parts follow a logical and didactic progression: From the essentials of the soil-plant context, to soils and mineral nutrition, and finishing with a selection of case histories. The first of the three sections (Part I, "A plant-centered biological complex") gives the reader the fundamentals of plant and soil physiology: ion uptake, inorganic mineral nutrition of plants, water uptake. Further along in this section are chapters on mycorrhizal and other symbioses, biomass recycling, and a précis on fire in the soils-vegetation mix.

Part II focuses on the soil component of the soil-plant syndrome. Good accounts of soils formation, the microenvironment of soils (matrix temperature and nutrient supply) now follow. Ch. 11 deals with the critical issues of nutrient availability and toxic ions, and Ch. 12 explores techniques used in testing for soil variables.

Part III is a refreshing departure. Rather than an attempt at rounding out an encyclopedic coverage, of yet other topics, Jeffrey adopts the case-history approach. Each one of the seven chapters deals with a specific and significant issue in soils-vegetation studies: 1) Autecology of contrasting species, 2) Restoration of derelict land, 3) Heathlands and other nutrient-poor ecosystems, 4) Arctic tundra, 5) Salt marshes, 6) Calcareous, and 7) serpentine plant-soil relations. It is in this section that Jeffrey builds an ecological edifice from the substance of the earlier chapters. The selection of case-histories is judicious, and tells a fascinating story.

All in all the book ably fills a significant niche in telling of the all-important relations between soils and plants. The North American co-publisher, Timber Press, is to be commended in supporting this worthy contribution. —A. R. KRUCKEBERG, University of Washington, Seattle, WA 98195.

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*North American Terrestrial Vegetation.* Edited by MICHAEL G. BARBOUR and W. DWIGHT BILLINGS. Cambridge University Press, New York. 1988. 434 pp., \$49.50 (hardbound). ICBN 0-521-26198-8.

At Last! Barbour and Billings have put together the state-of-the-art compilation of the vegetation of North America. Though they discuss in the preface how they started in 1982 on a three year project to produce this book, the need for such a volume has been talked about for the past twenty years. They are to be commended for the successful completion of a very difficult task.

The success of this publication is in large part due to the team of writers that Barbour and Billings were able to gather. The thirteen chapters are authored by a veritable "who's-who" of vegetation scientists on this continent: Bliss—Arctic, Elliott-Fisk—boreal forest, Peet—Rocky Mountains, Franklin—Pacific Northwest, Bar-